

CLAIMS

What is claimed is:

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1. An induction apparatus, comprising:
a winding arrangement having a winding start and a winding end for inducing a magnetic field in a magnetizable core; and
a lossy, magnetizable device so interacting with the winding arrangement that a magnetic flux is induced in the magnetizable device.
 2. The induction apparatus of claim 1, wherein the winding start and the winding end of the winding arrangement extend through the magnetizable device.
 3. The induction apparatus of claim 1, wherein the winding start and the winding end of the winding arrangement extend about the magnetizable device.
 4. The induction apparatus of claim 1, wherein the winding start and the winding end of the winding arrangement extend through and about the magnetizable device.
 5. The induction apparatus of claim 1, wherein the magnetizable device includes one of a ring-shaped magnetic core and rod-shaped magnetic core.

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6. The induction apparatus of claim 1, wherein the magnetizable device is made, at least partially, of ferrite.
 7. The induction apparatus of claim 1, wherein the winding arrangement is wound layer-by-layer on a coil body that is separate from the magnetizable core.
 8. An induction apparatus, comprising:
 - a magnetizable core;
 - a winding arrangement for inducing a magnetic field in the magnetizable core;
 - a shielding device disposed between the winding arrangement and the magnetizable core; and
 - an electric resistor connecting the shielding device to the magnetizable core.
 9. The induction apparatus of claim 8, wherein the shielding device includes an electrically conductive shielding foil.
 10. The induction apparatus of claim 8, wherein the winding arrangement is wound layer-by-layer on a coil body that is separate from the magnetizable core.

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11. The induction apparatus of claim 10, wherein the coil body is electrically insulating and at least partially surrounds the winding arrangement so that the shielding device is arranged between the winding arrangement and the electrically insulating coil body.
12. The induction apparatus of claim 10, wherein the winding arrangement is in the form of an annular body, wherein the shielding device covers at least a portion of an inner surface area of the annular body.
13. The induction apparatus of claim 12, wherein the shielding device completely covers the inner surface area of the annular body.
14. The induction apparatus of claim 11, wherein the winding arrangement, the shielding device and the coil body are made of a material so selected that a first capacitance between the winding arrangement and the shielding device is greater than a second capacitance between the shielding device and the magnetizable core.
15. The induction apparatus of claim 14, wherein the resistor is selected so as to attenuate in cooperation with the first and second capacitances a frequency to be damped.

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20. A method of operating an electric machine of a type having at least one winding arrangement and a magnetizable core, said method comprising the steps of:

applying a control voltage or a control current to the winding arrangement;
and

damping a capacitive bypass current between the winding arrangement and the magnetizable core by at least one of a lossy capacitive element and lossy inductive element.

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